

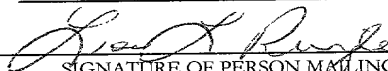
PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Peter M. Bonutti
Title : APPARATUS AND METHOD FOR
TISSUE REMOVAL
Art Unit : 3709 (?)
Examiner : G. Dawson (?)
Attorney Docket : BON-1360-8

Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

This is a Preliminary Amendment for the above-identified
application which is a continuation of Application Serial No.
09/483,676, filed January 14, 2000.

IN THE SPECIFICATION:

Between lines 1 and 2, please insert the following:

--Related Applications

This application is a continuation of U.S. Patent
Application Serial No. 09/483,676, filed January 14, 2000.
The aforementioned Application Serial No. 09/483,676 is

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itself a continuation of U.S. Patent Application Serial No. 09/323,326 filed June 1, 1999, (now U.S. Patent No. 6,174,313). The aforementioned Application Serial No. 09/323,326 is a continuation of U.S. Patent Application Serial No. 08/834,835 filed April 11, 1997 (now U.S. Patent No. 5,935,131). The aforementioned Application Serial No. 08/834,835 is itself a divisional of U.S. Patent Application Serial No. 08/695,274 filed August 9, 1996, (now U.S. Patent No. 5,694,951). The aforementioned Application Serial No. 08/695,274 is itself a divisional of U.S. Patent Application Serial No. 08/353,494 filed on December 9, 1994, (now U.S. Patent No. 5,577,517). The aforementioned Application Serial No. 08/353,494 is itself a divisional of U.S. Application Serial No. 08/134,914 filed October 12, 1993, (now U.S. Patent No. 5,403,317). The aforementioned Application Serial No. 08/134,914 filed October 12, 1993 is itself a divisional of U.S. Application Serial No. 07/545,908 filed June 28, 1990, (now U.S. Patent No. 5,269,785). The benefit of the earlier filing dates of the aforementioned Application Serial Nos. 09/483,676; 09/323,326; 08/834,835; 08/695,274; 08/353,494; 08/134,914 and 07/545,908 is hereby claimed.--

IN THE CLAIMS:

Please cancel claims 2-35 without prejudice.

Please add the following claims:

36. A surgical procedure to be conducted on a patient, said surgical procedure comprising the steps of removing tissue from a first location in the patient's body, separating one or more components from at least a portion of the tissue removed from the patient's body, and implanting the tissue at a second location in the patient's body after separating one or more components from at least a portion of the tissue.

37. A surgical procedure as set forth in claim 36 wherein said step of separating one or more components from the tissue removed from the patient's body includes centrifuging at least a portion of the tissue removed from the patient's body.

38. A surgical procedure as set forth in claim 36 further including the step of adding a substance to the body tissue after separating one or more components from the body tissue and prior to implanting the body tissue at a second location in the patient's body.

39. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes cutting body tissue at the first location and moving the body tissue away from the first location under the influence of suction.

40. A surgical procedure as set forth in claim 39 wherein said step of cutting body tissue includes rotating a cutting tool

under the influence of force transmitted through an elongated member which is at least partially enclosed by a tubular member, said step of moving the body tissue away from the first location under the influence of suction includes moving body tissue cut by the rotating cutting tool along the tubular member under the influence of suction.

41. A surgical procedure as set forth in claim 36 wherein said step of implanting the tissue at the second location includes inserting a cannula into the patient's body, moving a surgical instrument through the cannula, removing tissue from the second location, said step of removing tissue from the second location includes using the surgical instrument inserted through the cannula, and, thereafter, performing said step of inserting tissue removed from the first location in the patient's body at the second location in the patient's body.

42. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes removing blood from the first location in the patient's body, said step of separating one or more components from the tissue removed from the patient's body includes separating one or more components from blood removed from the patient's body, said step of implanting the tissue at a second location in the patient's body includes implanting one or more components of the blood removed from the patient's body.

43. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from the first location in the patient's body includes removing blood and other tissue from the first location in the patient's body, said step of separating one or more components from the tissue removed from the patient's body includes separating at least a first component from blood removed from the patient's body, said step of implanting the tissue at a second location in the patient's body includes implanting the blood removed from the patient's body after removing at least the first component from the blood and implanting at least a portion of the other tissue removed from the patient's body.

44. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes removing at least blood from the first location, said step of separating one or more components from the tissue removed from the patient's body includes removing at least a first component from the blood removed from the patient's body, said step of implanting the tissue at the second location includes implanting at least the blood from which at least the first component has been removed.

45. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes removing blood and other tissue from the first location, said step of separating one or more components from the tissue removed from the patient's body includes centrifuging

the blood and other tissue removed from the first location, said step of implanting the tissue at a second location is performed after centrifuging the blood and other tissue removed from the first location.

46. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes removing blood and other tissue from the first location, said set of separating one or more components from the tissue removed from the patient's body includes filtering the blood and other tissue removed from the first location, said step of implanting tissue at a second location is performed after filtering the blood and other tissue removed from the first location.

47. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes removing blood and other tissue from the first location, said step of separating one or more components from the tissue removed from the patient's body includes moving the blood and other tissue removed from the first location into a trap, said step of implanting tissue at a second location is performed after moving the blood and other tissue removed from the first location into the trap.

48. A surgical procedure as set forth in claim 36 further including the step of packing tissue removed from the first location in the patient's body to form a body of tissue, said step

of implanting the tissue at a second location in the patient's body includes placing the body of packed tissue at the second location in the patient's body.

49. A surgical procedure as set forth in claim 36 wherein said step of removing tissue from a first location in a patient's body includes inserting a first tubular member into a patient's body and moving the body tissue from the first location in the patient's body through the first tubular member to a location outside of the patient's body, said step of implanting the tissue at a second location in the patient's body includes inserting a second tubular member into the patient's body and moving the tissue through the second tubular member.

50. A surgical procedure to be conducted on a patient, said surgical procedure comprising the steps of inserting a first tubular member into the patient's body, moving body tissue from a first location in the patient's body through the first tubular member to a location outside of the patient's body, inserting a second tubular member into the patient's body, and moving at least a portion of the body tissue through the second tubular member to a second location in the patient's body.

51. A surgical procedure as set forth in claim 50 further including the step of separating one or more components from at least a portion of the body tissue moved through the first tubular member prior to performance of said step of moving body tissue

through the second tubular member to the second location in the patient's body.

52. A surgical procedure as set forth in claim 50 further including the step of centrifuging at least a portion of the body tissue moved through the first tubular member to separate one or more components from the body tissue prior to performing said step of moving the body tissue through the second tubular member.

53. A surgical procedure as set forth in claim 50 further including the step of adding a substance to the body tissue after moving the body tissue from the first location through the first tubular member to a location outside of the patient's body and prior to moving the body tissue through the second tubular member.

54. A surgical procedure as set forth in claim 50 wherein said step of moving the body tissue from the first location through the first tubular member includes moving the body tissue through the first tubular member under the influence of suction.

55. A surgical procedure as set forth in claim 50 further including the step of cutting body tissue at the first location with a cutting tool which is driven under the influence of force transmitted through the first tubular member.

56. A surgical procedure as set forth in claim 50 further including the step of moving a surgical instrument through the second tubular member, and removing tissue from the second location with the surgical instrument prior to moving body tissue through the second tubular member to the second location.

57. A surgical procedure as set forth in claim 50 wherein said step of moving body tissue from a first location in the patient's body through the first tubular member includes moving blood from the first location in the patient's body through the first tubular member, said surgical procedure further includes separating one or more components from the blood, said step of moving body tissue through the second tubular member to the second location in the patient's body includes moving the blood from which one or more components have been removed through the second tubular member to the second location in the patient's body.

58. A surgical procedure as set forth in claim 50 wherein said step of moving tissue from the first location in the patient's body through a first tubular member includes moving blood and pieces of other tissue through the first tubular member, said surgical procedure further includes filtering the blood and other tissue moved through the first tubular member, said step of moving body tissue through the second tubular member is performed after filtering the blood and other tissue.

59. A surgical procedure as set forth in claim 50 wherein said step of moving tissue from the first location in the patient's body through a first tubular member includes moving blood and pieces of other tissue through the first tubular member, said surgical procedure further includes moving the blood and other tissue into a trap, said step of moving body tissue through the second tubular member is performed after moving the blood and other tissue into a trap.

60. A surgical procedure as set forth in claim 50 further including the step of packing tissue moved through the first tubular member to form a body of tissue, said step of moving the body tissue through the second tubular member includes moving the body of packed tissue through the second tubular member.

61. A surgical procedure to be conducted on a patient, said surgical procedure comprising the step of removing blood and other body tissue from a first location in the patient's body, shaping the blood and other body tissue to form a body of tissue having a desired shape, and implanting the body of tissue at a second location in the patient's body.

62. A surgical procedure as set forth in claim 61 further including the step of separating one or more components from at least a portion of the blood removed from the first location in the patient's body prior to shaping the blood and other body tissue to form a body of tissue having a desired shape.

63. A surgical procedure as set forth in claim 61 further including the step of separating one or more components from at least a portion of the other body tissue removed from the first location in the patient's body prior to shaping the blood and other body tissue to form a body having a desired shape.

64. A surgical procedure as set forth in claim 61 further including the step of separating one or more components from at least a portion of the blood and other body tissue removed from the first location in the patient's body prior to shaping the blood and other body tissue to form a body of tissue having a desired shape.

65. A surgical procedure as set forth in claim 61 wherein said step of implanting the body tissue at the second location includes changing the shape of body of tissue.

66. A surgical procedure as set forth in claim 61 wherein said step of removing blood and other body tissue from a first location in the patient's body includes moving the blood and other body tissue along a first tubular member, said step of implanting the body of tissue at a second location in a patient's body includes moving the body of tissue along a second tubular member.

67. A surgical procedure as set forth in claim 61 further including the step of centrifuging the blood prior to performing said step of shaping the blood and other body tissue.

68. A surgical procedure as set forth in claim 61 further including the step of centrifuging the other body tissue prior to performing said step of shaping the blood and other body tissue.

69. A surgical procedure to be conducted on a patient, said surgical procedure comprising the steps of cutting body tissue at a first location in a patient's body, moving blood and other body tissue along a first tubular member in a direction away from the first location in the patient's body to a location outside of the patient's body, separating one or more components from at least one of the blood and other body tissue at a location outside of the patient's body, thereafter, moving the blood and other body tissue along a second tubular member in a direction toward a second location in the patient's body, and implanting the blood and other body tissue at the second location in the patient's body.

70. A surgical procedure as set forth in claim 69 wherein said step of separating one or more components from at least one of the blood and other body tissue includes centrifuging the blood.

71. A surgical procedure as set forth in claim 69 wherein said step of separating one or more components from at least one of the blood and other body tissue includes centrifuging the other body tissue.

72. A surgical procedure as set forth in claim 69 wherein said step of separating one or more components from at least one of the blood and other body tissue includes centrifuging the blood and the other body tissue.

73. A surgical procedure as set forth in claim 69 further including the step of adding a substance to the blood and other body tissue prior to moving the blood and other body tissue along the second tubular member.

74. A surgical procedure as set forth in claim 69 wherein said step of moving blood and other body tissue along a first tubular member includes moving the blood and other body tissue under the influence of suction.

75. A surgical procedure as set forth in claim 69 wherein said step of cutting body tissue at the first location in a patient's body includes rotating a cutting tool under the influence of force transmitting through the first tubular member.

76. A surgical procedure as set forth in claim 69 further including the steps of moving a surgical instrument through the second tubular member and removing the tissue from the second location before moving the blood and other body tissue along the second tubular member.

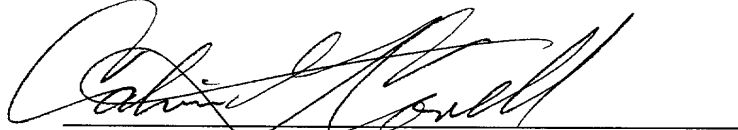
REMARKS

This Preliminary Amendment is being submitted before Action in order to expedite the prosecution of this application.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned "**Version With Markings To Show Changes Made.**"

If for any reason the Examiner believes that a telephone conference would expedite the prosecution of this application, it is respectfully requested that he call applicant's attorneys in Cleveland, Ohio at 621-2234, area code 216. Please charge any deficiency in the fees for this application to our Deposit Account No. 20-0090.

Respectfully submitted,



Calvin G. Covell
Reg. No. 24,042

TAROLLI, SUNDHEIM, COVELL, TUMMINO
& SZABO, L.L.P.
1111 Leader Building
Cleveland, OH 44114-1400

Phone: (216) 621-2234

Fax: (216) 621-4072

Version With Markings To Show Changes Made

IN THE SPECIFICATION:

The following paragraph has been inserted between lines 1 and 2:

--Related Applications

This application is a continuation of U.S. Patent Application Serial No. 09/483,676, filed January 14, 2000. The aforementioned Application Serial No. 09/483,676 is itself a continuation of U.S. Patent Application Serial No. 09/323,326 filed June 1, 1999, (now U.S. Patent No. 6,174,313). The aforementioned Application Serial No. 09/323,326 is a continuation of U.S. Patent Application Serial No. 08/834,835 filed April 11, 1997. The aforementioned Application Serial No. 08/834,835 is itself a divisional of U.S. Patent Application Serial No. 08/695,274 filed August 9, 1996, (now U.S. Patent No. 5,694,951). The aforementioned Application Serial No. 08/695,274 is itself a divisional of U.S. Patent Application Serial No. 08/353,494 filed on December 9, 1994, (now U.S. Patent No. 5,577,517). The aforementioned Application Serial No. 08/353,494 is itself a divisional of U.S. Application Serial No. 08/134,914 filed October 12, 1993, (now U.S. Patent No. 5,403,317). The aforementioned Application Serial No. 08/134,914 filed October 12, 1993 is itself a divisional of U.S. Application Serial No. 07/545,908 filed June 28, 1990, (now U.S. Patent No. 5,269,785). The benefit of the earlier filing dates of the aforementioned Application Serial Nos.

09/483,676; 09/323,326; 08/834,835; 08/695,274;
08/353,494; 08/134,914 and 07/545,908 is hereby
claimed.--

FOOTNOTES